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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/756,838	01/13/2004	Frank Wiedmann	02 P 17690	1416
25281	7590	06/23/2005	EXAMINER	
DICKE, BILLIG & CZAJA, P.L.L.C. FIFTH STREET TOWERS 100 SOUTH FIFTH STREET, SUITE 2250 MINNEAPOLIS, MN 55402			NGUYEN, MINH T	
			ART UNIT	PAPER NUMBER
			2816	

DATE MAILED: 06/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/756,838

Applicant(s)

WIEDMANN, FRANK

Examiner

Minh Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,6,11,14,15 and 17-20 is/are rejected.
- 7) ☒ Claim(s) 3-5,7-10,12,13 and 16 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 4/19/04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

## **DETAILED ACTION**

### ***Claim Objections***

1. Claims 16 and 17 are objected to because of the following informalities:

In claim 16, line 3-4, the phrase "k of said circuits" should be changed to -- k number of said circuit --, see line 6 of claim 14, there is only one circuit, i.e., "a circuit".

In claim 17, line 1, the phrase "each of the circuits" should be changed to -- the circuit --, see line 6 of claim 14, there is only one circuit, i.e., "a circuit".

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-2, 6, 14-15 and 17-19 are rejected under 35 U.S.C. 102(b) as being anticipated by US Patent No. 5,638,016, issued to Eitrheim.

As per claim 14, Eitrheim discloses a device (figure 1) for producing an output signal (PHI 1) that is delayed compared to an input signal (INPUT CLOCK), comprising:

an input (the terminal which receives the INPUT CLOCK) for receiving the input signal;

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at least first (DELTA 1) and second (DELTA 2) delay elements coupled to the input for producing respective intermediate signals (at the outputs of delay elements DELTA 1 and DELTA2) in response to the input signal; and

a circuit (latch 28) connected to the delay elements to form from the first and second intermediate signals an output signal (the output signal PHI1, at the output terminal Q of latch 28) having a rising edge that corresponds to an edge of the first intermediate signal and having a falling edge that corresponds to an edge of the second intermediate signal (figure 7, graphs labeled delay line DELTA 1, delay line DELTA 2 and Q on S-R latch 28 show the recited limitation).

As per claim 15, the recited limitation is shown in figure 2, i.e., delay elements in the first and second delay elements are connected in series.

As per claim 17, the recited multiplexer reads on latch 28. It is proper to consider latch 28 as the recited multiplexer because it performs the same function as the circuit recited in claim 14, i.e., form from the first and second intermediate signals an output signal (the output signal PHI1, at the output terminal Q of latch 28) having a rising edge that corresponds to an edge of the first intermediate signal and having a falling edge that corresponds to an edge of the second intermediate signal (figure 7, graphs labeled delay line DELTA 1, delay line DELTA 2 and Q on S-R latch 28).

As per claim 18, the recited regulation device reads on multiplexers 36, 38 and 40 which are controllable by D0, ..., D4 signals as shown in figure 2. Adjusting the delay of the device would provide any delay value with respect to the input signal.

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As per claim 19, the recited limitation is shown in figure 2, i.e., the first and second delay elements successively delay the input signal.

As per claim 1, this claim is merely a method to operate a device having the structure discussed in claim 14. Since Eitrheim teaches the structure of the device, the method to operate such a structure is inherently taught.

As per claims 2 and 6, these claims are rejected for the same reasons noted in claims 15 and 18, respectively.

3. Claims 1-2, 11, 14-15, 17 and 19-20 are rejected under 35 U.S.C. 102(b) as being anticipated by US Patent No. 5,686,855, issued to Lee.

As per claim 14, Lee discloses a device (figure 2) for producing an output signal (OUT) that is delayed compared to an input signal (P), comprising:

an input (the terminal which receives the input signal P) for receiving the input signal;  
at least first (16) and second (14) delay elements coupled to the input for producing respective intermediate signals (at the outputs of delay elements 16 and 14) in response to the input signal; and

a circuit (exclusive OR gate 18) connected to the delay elements to form from the first and second intermediate signals an output signal (OUT) having a rising edge that corresponds to an edge of the first intermediate signal and having a falling edge that corresponds to an edge of the second intermediate signal (figure 3, graphs labeled A, B and OUT show the recited limitation).

As per claim 15, the recited delay elements in the first and second delay elements are connected in series are disclosed in column 2, lines 34-48.

As per claim 17, the recited multiplexer reads on XOR gate 18. It is proper to consider XOR gate 18 as the recited multiplexer because it performs the same function as recited in claim 14, i.e., form from the first and second intermediate signals an output signal (OUT) having a rising edge that corresponds to an edge of the first intermediate signal and having a falling edge that corresponds to an edge of the second intermediate signal (figure 3, graphs labeled A, B and OUT).

As per claim 19, the recited limitation is discussed in column 2, lines 34-48, the first and second delay elements successively delay the input signal through a chain delay elements.

As per claim 20, the recited limitation “an inversion of the second intermediate signal” is met because Lee discloses delay unit 14 is a chain of inverters (column 2, lines 34-35). The chain comprises N inverters. If the output of the (N-1)th inverter is the second intermediate signal, the output of the Nth inverter is the inversion of the second intermediate signal.

As per claim 1, this claim is merely a method to operate a device having the structure discussed in claim 14. Since Lee teaches the structure of the device, the method to operate such a structure is inherently taught.

As per claim 2, this claim is rejected for the same reason noted in claim 15.

As per claim 11, Since Lee discloses the input signal is a input test pulses (column 2, line 4), he inherently discloses that these pulses are generated by a circuit. Because this circuit has a delay, the recited “delaying” reads on the delay causes by the circuit.

*Allowable Subject Matter*

4. Claims 3-5, 7-10, 12-13 and 16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 3-5 are allowable because the prior art of record fails to disclose or suggest the inclusion of a step of combining pairs of intermediate signals whose relatively to one another is about 180 degrees as recited in claim 3.

Claims 7-10 are allowable because the prior art of record fails to disclose or suggest the inclusion of a step of regulating which is depending on the input signal, the intermediate signal with the largest delay and the further one of the intermediate signals as recited in claim 7.

Claims 12-13 are allowable because the prior art of record fails to disclose or suggest the inclusion of a step of combining in response to a control signal for combining the first intermediate signal and an inversion of the second intermediate signal as recited in claim 12. The Lee reference does not teach the limitation "in response to a control signal".

Claim 16 is allowable for the same reason noted in claim 3.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Minh Nguyen whose telephone number is **571-272-1748**. The examiner can normally be reached on Monday, Tuesday, Thursday, Friday 7:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Callahan can be reached on 571-272-1740. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



6/21/05

Minh Nguyen  
Primary Examiner  
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